Abstract

Sodium fosphenytoin, 5,5-diphenyl-3-[(phosphonooxy)methyl]imidazolidine-2,4-dione disodium salt, a known anticonvulsive, antiepileptic and antiarrhythmic, can be prepared by reacting 3-hydroxymethyl-5,5-diphenylimidazoline-2,4-dione with a phosphorous acid diester or triester activated by an oxidizing agent, whose ester groups can be selectively cleaved from the reaction product, cleaving the ester groups from the resulting phosphoric acid diester 2,5-dioxo-4,4-diphenyl-imidazolidin-1-ylmethyl ester and converting the resulting 5,5-diphenyl-3-[(phosphonooxy)methyl]imidazolidine-2,4-dione to its disodium salt.

The oxidizing agent is advantageously a halogenating agent such as elemental bromine or N-bromosuccinimide, and the phosphorous acid ester used is advantageously dibenzyl phosphite.

Of particular importance – even taken on its own – is the fact that a phosphoric acid diester 2,5-dioxo-4,4-diphenylimidazolidin-1-ylmethyl ester, whose phosphoric acid diester structural element can be selectively cleaved, can be converted to 5,5-diphenyl-3-[(phosphonooxy)methyl]imidazolidine-2,4-dione and the latter converted to its disodium salt in a single operation.